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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,893	09/29/2006	Osamu Kasono	PC 3219.01 US	6598
55694 7590 05/27/2009 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER DYE, ROBERT C	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,893	Applicant(s) KASONO, OSAMU	
	Examiner ROBERT DYE	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-22 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/05/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Detailed Action is in response to Applicant's reply to Restriction Requirement dated 05/11/2009 wherein apparatus claims 1 and 4-16 were elected.

Election/Restrictions

2. Applicant's election of apparatus claims 1 and 4-16 in the reply filed on 5/11/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Objections

3. Claim 1 is objected to because of the following informalities:
4. Claim 1, line 5, recites "means are provided to near said substrate". Is there a missing or extra word in this phrase?
5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 6-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

8. Claims 6-8 recite the use of two or more permanent magnets with magnetic force adjustable means. The specification, however, appears to disclose using movable permanent magnets as the magnetic pressing force instead of electromagnets (pg 6, lines 16-19). Claim 1 requires the use of electromagnets. The specification does not disclose how the movable permanent magnets are intended to be present with the electromagnets as the magnetic force generating means. The permanent magnets shown in figure 3(b) and described on pg 7 are embedded in the flat plate above the transfer die and are thus incapable of applying a magnetic force to the die with the substrate interposed therebetween as required in claim 1 (Fig 3(b) appears to be a different embodiment from claim 6, thus unclear how the permanent magnets are intended to be employed as claimed).

9. Claim 9 recites a "pressing means includes a plurality of pressure cylinders". According to the instant specification, the use of pressure cylinders corresponds to embodiment 3 and that the pressing means "exercises control by using hydraulic cylinders 20 instead of the respective electromagnets 21 of the first embodiment" (pg 23, lines 17-20). Thus, electromagnets and pressure cylinders for the pressing means are mutually exclusive. Claim 1 corresponds to the first embodiment and requires the inclusion of electromagnets in the pressing means. The specification does not describe how pressure cylinders can be employed in the same apparatus as electromagnets.

Claims 10-14 are rejected as being dependent on claim 9.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 1, 4, 5, 9, 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito (JP11-320587, of record, with English machine translation) in view of Seary (USP 3,887,312) and Fujita et al. (USP 5,352,394).

13. Regarding claim 1, Masahito discloses an apparatus for transferring a pattern onto a substrate wherein said apparatus comprises a die with a concavo-convex pattern (see fig. 1 and 4) and a pressing means comprising a plurality of force generating means. Masahito fails to teach that said pressing means include magnetic force generating means for generating a magnetic force and that said transfer die is made of ferromagnetic material. Instead, Masahito employs a hydraulic cylinder as the force generating device. Seary teaches an apparatus for clamping together two mold platens

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wherein a plurality of electromagnets are employed as the pressing means (col 2, lines 45-50, Fig. 2). Regarding the use of ferromagnetic material, Seary teaches that the movable platen is attracted by the magnetic field of the electromagnets, thus the platen must inherently be made of a ferromagnetic material. Regarding the motivation to combine Seary and Masahito, Fujita teaches that molding apparatuses which employ hydraulic driving type cylinder-piston mechanisms to press together opposing mold platens require greater work space for the cylinder and are problematic in that they require countermeasures for preventing the deterioration of the work environment due to leakage of oil or oil catching on fire (col 2, lines 7-27). Fujita teaches that the number of parts required and the size of the mold clamping apparatus can be reduced by employing electromagnetic pressing means. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ the electromagnetic-based pressing means of Seary as the pressing means of Masahito for the purpose of reducing the apparatus size and number of parts as taught by Fujita.

14. Regarding claim 4, Seary discloses that the electromagnetic pressing means includes a current controller for adjusting the current to the electromagnets (col 4, lines 66-col 5, line 6). It would have been obvious to a person having ordinary skill in the art to employ a current controller to adjust the magnetic force applied as taught by Seary in the apparatus of Masahito.

15. Regarding claim 5, Masahito discloses the use of location sensors 10 which detect the position of the mold and send a signal to a control circuit 11 which in turn, controls the pressing means 3 such that the mold is adjusted to a predetermined

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position (paragraph 12, 21). Masahito discloses that the controller adjusts the back pressure and press pressure of the pressing cylinder rather than a current. However, as noted above for claim 4, since the electromagnetic pressing means require current to control the pressing force, it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ a controller which controls the current to the electromagnetic pressing means.

16. Regarding claims 9, 10, and 11, Masahito discloses an apparatus wherein the pressing means 3 are a plurality of pressure cylinders, a control means 12 for controlling the pressure applied, and a measuring means 12 for measuring the distance between the substrate and die (see figure 5).

17. Regarding claim 15, the plurality of pressing devices employed by the apparatus taught by the combination of Masahito, Seary and Fujita can be considered to be separate pressing means. Thus, a second pressing means would be present and would be capable of uniform pressing.

18. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312) and Fujita et al. (USP 5,352,394) as applied to claim 5 and 8 above, and further in view of Shinji (JP 2004-034300, machine translation translation).

19. Regarding claims 6 and 7, the combination of Masahito, Seary and Fujita do not teach the use of permanent magnets. Shinji discloses a molding apparatus (Fig 1) and teaches that magnetic attraction between the two mold platens can be achieved by

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electromagnetic or permanent magnets (paragraph [0010-0011]). Shinji also discloses a moving mechanism Z which drives the mold in a perpendicular direction. The force of magnetic attraction between two objects will intrinsically increase as the objects are moved closer to each other. Thus the movement means inherently controls the magnetic force acting on the movable mold die and allows for aligning the die into a precise position. It would have been obvious to a person having ordinary skill in the art at the time of the invention to employ the permanent magnet and moving means as taught by Shinji in the apparatus of Masahito, Seary, and Fujita for the purpose of aligning the transfer die on the substrate. A person having ordinary skill in the art would have been motivated to employ permanent magnets for the purpose of eliminating the need to provide a current source for said magnets.

20. Regarding claim 8, Masahito discloses the use of measuring means (location sensors 10) and control means (control circuit 11) for adjusting the position of the mold face to a predetermined position (paragraph 12, 21). It would be obvious to person having ordinary skill in the art at the time of the invention to employ the measuring and control means to control the movement means in the apparatus of Masahito, Seary, Fujita, and Shinji for the purpose of ensuring that the mold die is in the desired position during forming, thus preventing defective products from being formed.

21. Claim 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312) and Fujita et al. (USP 5,352,394) as applied to claim 5 and 11 above or

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Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312), Fujita et al. (USP 5,352,394) and Shinji (JP 2004-034300, machine translation translation) as applied to claim 8, and further in view of Ishikawa et al. (USP 5,540,577).

22. Masahito discloses a measuring means (location sensor 10) for determining the position of the platen. Masahito does not teach that the measuring device is a device using laser reflection. However, such is well known in the art as a means of measuring distance. For example, Ishikawa et al. discloses a laser system for measuring the span of a mold opening which comprises laser head 28-1 and reflector 28-2 (abstract, fig. 1). It would have been obvious for a person having ordinary skill in the art to employ a laser measuring device as taught by Ishikawa in the apparatus of Masahito (combination) for the purpose of accurately measuring the mold plate position.

23. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312) and Fujita et al. (USP 5,352,394) as applied to claim 5 and 11 above or Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312), Fujita et al. (USP 5,352,394) and Shinji (JP 2004-034300, machine translation translation) as applied to claim 8, and further in view of Brunnschweller et al. (USP 4,743,190).

24. Masahito discloses a measuring means (location sensor 10) for determining the position of the platen. Masahito does not teach that the measuring device is a device

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using ultrasonic reflection. However, such is well known in the art as a means of measuring distance in a mold. For example, Brunnschweller et al. discloses an ultrasonic range finder for determining positions of movable parts within a mold (col 16, lines 25-28). It would have been obvious for a person having ordinary skill in the art to employ a ultrasonic measuring device as taught by Brunnschweller et al. in the apparatus of Masahito (combination) for the purpose of accurately measuring the mold plate position.

25. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312) and Fujita et al. (USP 5,352,394) as applied to claim 5 and 11 above or Masahito (JP11-320587, of record, with English machine translation), Seary (USP 3,887,312), Fujita et al. (USP 5,352,394) and Shinji (JP 2004-034300, machine translation translation) as applied to claim 8, and further in view of Bailey et al. (USP 6,696,220).

26. Masahito discloses a measuring means (location sensor 10) for determining the position of the platen. Masahito does not teach that the measuring device is a device using a change in capacitance. However, such is well known in the art as a means of measuring distance. For example, Bailey et al. discloses that a capacitance sensor can be used as a non-contact measuring device to determine the distance between a template and substrate (col 21, lines 5-8). It would have been obvious for a person having ordinary skill in the art to employ a laser measuring device as taught by Bailey et

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al. in the apparatus of Masahito (combination) for the purpose of accurately measuring the mold plate position.

Allowable Subject Matter

27. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

28. The following is a statement of reasons for the indication of allowable subject matter: Claim 16 recites a second pressing means which includes a pressure applying means and a balloon for transmitting a pressure of the pressure applying means to the transfer die. The combination of Masahito, Seary, and Fujita applied above teach an electromagnetic pressing means as the first pressing means but do not disclose or suggest the use of a balloon as a secondary pressing device. Mineo et al. (JP 02-192045, of record) and Hayashi et al. (PGPub 2003/0231578) disclose balloons used as pressing devices; however, such devices are employed as the singular pressing means and there is no suggestion to combine with a secondary magnetic pressing means. The prior art cited does not teach or suggest a pattern transfer apparatus which employs a magnetic pressing means comprising two or more electromagnets and a balloon-based pressing means.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT DYE whose telephone number is (571)270-

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7059. The examiner can normally be reached on Monday to Friday 8:00AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791